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REMOTE STORAGE

THE FACTORS ESSENTIAL TO COMPLETE MEDICAL DIAGNOSIS.

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As the study of the infecting agents has progressed, it has become more and more apparent that diagnosis to be of the highest clinical value should be expressed as accurately as possible in terms of causation.

While an exact classification of cases along etiological lines cannot always be made in the present state of our information and with our present methods of clinical examination, yet so much can be done as to materially improve our conception of individual cases and to assist our management. The old diagnosis of dropsy was good enough until the causes of the condition were discovered, when it became a mere symptom. The fact that the causes of dropsy were themselves mainly anatomical conditions, the results of precedent causes, did not detract from their value, and the diagnosis of these causes materially facilitated the study of the cases presenting the symptom. In other words, the tendency has been to express diagnoses at first in prominent symptoms, then in terms of proximate causes, and later in terms of causation, less and less proximate. But the more remotely from the symptom the effective cause is traced, the more numerous become the discernible relations of that cause, and consequently the more complex does the total determinable etiology of a given condition become. Diagnosis, expressed exclusively in anatomical terms, although sufficient a dozen years ago, is no longer sufficient.. This proposition is generally true, because the anatomical diagnosis is of no higher order than the naming of a symptom, even although that symptom be at times of the highest significance as to prognosis and treatment, and even although in many instances no diagnosis less proximate can be made, owing to the inability to secure the necessary data. Exceptions to the proposition occur,

but are more apparent than real. Notable instances may be cited in empyema and appendicitis. In both of these instances the anatomical condition per se threatens life and may be directly remedied and the danger averted. Practically for the individual the anatomical diagnosis is here sufficient. But surely it will not be contended that a diagnosis of causation even here would be valueless even if only for its use in diagnosis and prophylaxis in others. On the other hand, the insufficiencies of an anatomical diagnosis are matters of daily observation. Probably nowhere can this better be shown than in cases presenting the symptom bronchitis. This symptom occurs as a common manifestation of many acute infections, notably the exanthemata; it is sometimes the expression of a stercoræmia; very commonly it is produced by autotoxemias. Moreover, underlying backgrounds, especially rickets in infancy, are responsible for its maintenance and often must be modified before the leading symptom can be controlled. The recognition of this varied etiology is not only necessary to the best and most successful treatment, but it also affords an understanding of a state of affairs, which was very mysterious when viewed from the anatomical light alone. Reference is here made to the lack of correspondence between the degree of the anatomical condition and the degree of sickness of the individual. For instance, it is not uncommon to find infants with extensive bronchial catarrh, the whole chest filled with rales and often many of them quite fine, without there being any special elevation of temperature, or dyspnea or rapid breathing, or weakness or lack of interest in surroundings; in other words, extensive bronchitis anatomically speaking with but little sickness. On the other hand, slight bronchitis may be the only anatomical lesion in very sick babies. In neither case is "bronchitis" a sufficient diagnosis; in both cases it is a misleading diagnosis. One of the unfortunate features of anatomical diagnosis is its implied completeness and its apparent existence as a distinct entity, a condition which very naturally tends to obscure the totality of the relations existing in the patient.

But diagnosis to be complete must express the totality of the pathological conditions present in the individual. To reach this totality the pathological state must be investigated from the standpoint of causation. To secure this end, the factors of causation accepted as fundamental and as the basis of clinical investigation, must be sufficient to comprehend all possible etiological factors, and must also be coördinate. It seems to me that all pos-

sible etiological factors of pathological processes may be grouped under the four following coördinate subdivisions, viz: Heredity, nutrition, infection, accident.

It will be seen that all secondary etiological factors may be grouped as affecting one or more of these general factors. For instance, age and sex are factors affecting nutrition, which is used here necessarily in its most comprehensive sense. Climatic conditions influence both nutrition and infection. Generally speaking, accident, or rather trauma, being purely of surgical interest, may be ignored in any scheme of medical diagnosis. The influence of race is expressed in heredity. The study of the hereditary conditions is especially valuable in children, for in general it points out the particular dangers ahead of the individual, and affords an opportunity of so adjusting environment as to avoid or postpone these dangers. The common practice of ignoring heredity and relegating its description to the indefinite expression, "family history negative," except where tuberculosis or syphilis can be discovered, cannot be too strongly condemned. Heredity is never negative. Its history may of course be incomplete or entirely negative, but not so frequently as usually expressed. When we find a family whose members die at an advanced age from cerebral hemorrhage, Bright's disease, cardiac lesions, or other results of arteriosclerosis, we know that we are dealing with a people whose nutritive processes, determined by the special chemical workings of their nutritive organs, differ from those of the ideally normal individual, if such exists, and are sufficiently peculiar to warrant a special designation and recognition as of a specific type of body. For convenience sake I am in the habit of designating this type of nutrition as gouty, without any reference to any of the theories of gout extant. When epilepsy, insanity, tic, inebriety and other nervous disorders prevail in the family, the agreement I believe is general to recognize such heredity as neurotic. It is often convenient to note in the heredity, anatomical or functional peculiarities of special organs when these are transmitted. It is probable that the elements of heredity to be noted to-day are not as numerous as they will be hereafter, when a fuller study of the influence of heredity upon the development and progress of pathological processes shall have led to more accurate analyses and the determination of truer relations. The study of heredity is especially valuable as affording a clue to the prevention of disease, and therefore finds its greatest value in the early life of the individual. Indeed, without

a careful study of heredity it would scarcely be possible to successfully prosecute the chief aim of pediatrics, viz.: to make of a given child the strongest possible adult.

The hereditary factors which may be conveniently noted are tuberculosis, syphilis, gout and the neurotic type; in other words the conditions often spoken of as diathetic. As before remarked, it is often convenient to note anatomical and physiological peculiarities of special organs or other structures, even although they may be but particular instances of the more general elements previously noted. Thus structural defects, like monorchidism, cleft palate, supernumerary fingers, etc., may be associated with epilepsy, and be indicative of a cerebral structural defect. Marked hepatic disorders in more than one generation are often important; and abnormalities in the function of the thyroid gland are of sufficient importance to always receive special mention. It is clear that hyperthyroidation, expressing itself as Graves' disease in the adult, is distinctly transmitted and often shows itself even in the infant. While subthyroidation is distinctly an infantile disease, I am sure that in two, at least, of my cases there was a distinct heredity. If it were possible to determine accurately in every case all the etiological factors involved, the diagnosis could be expressed entirely in terms of causation. But this is not possible, hence many diagnoses must be expressed tentatively in terms of symptomatology. Of symptomatological terms, the anatomical are usually the best, but often functional terms alone must be employed, such for instance as epilepsy or chorea. Moreover, many anatomical conditions are characterized by such a definite natural history, because of commonly associated conditions, that their names are conveniently employed to designate such a comprehensive group. Thus for instance, interstitial nephritis recalls at once a very definite pathological state, but still it is not sufficiently definite because the elements of etiology are entirely ignored in the term. Certain factors in the management of cases presenting the condition interstitial nephritis are determined wholly and solely by the fact of this anatomical condition, while other factors of the management are determined by the etiological elements. Hence at no time can the term interstitial nephritis be considered a complete diagnosis. The anatomical term, posterior spinal sclerosis is less open to objection, because of its apparent very close relation to a predominating etiological factor. But until it can be shown that the anatomical condition

is always the result of syphilis it would be better to designate the clinical entity by the indefinite term locomotor ataxia.

It is, of course, quite difficult to keep in mind these varying aspects of disease in different cases, and as an assistance I have for the past year been taking histories of my private office cases on a form which shows the heredity, nutritional progress, infection past and present, as well as the anatomical and physiological conditions. It is not necessary or desirable to make such complete inquiry into every case for which one is consulted, but I have collected in that time about 300 histories which have demonstrated to me very fully the utility of the plan. As an illustration I append the history of a case in which I was consulted for the purpose of looking over the general nutrition, and with special reference to a condition of disturbed sleep.

H. K., male, age 3 years. Family history.—Mother, nervous, active. Maternal grandmother, healthy, not nervous. Maternal grandfather died at 50 of apoplexy and Bright's disease. Father, strong, active, nervous; has slight endocarditis; is a twin. Paternal grandmother, rheumatic, gouty, nervous. Paternal grandfather, age 64, sound, active. No tuberculosis in family; embryonic influences normal.

Nutritional history:—Breast exclusively 9 mos., and 1 mo. while weaning. Barley water 2-3, milk 1-3, with 1-2 oz. cream in each feeding until 15 mos., then occasional egg, potato, oatmeal, orange juice, prunes, bread with thin butter, bacon, some; cream and milk on cereals since 20 mos.; animal food, meat, chicken, etc., has amounted to about three times a week for the past year. No tea, coffee or other stimulant. Weighed 8 pounds at birth and has grown normally since. Appetite irregular; always tendency to loose bowels but no putrid diarrhea. Dentition normal; walked at 14 mos.; talked at 9 mos. Has a croupy tendency; skin action below normal; eczema last winter, lasted 4 or 5 mos. Has a tendency to nasal discharge; occasional bronchitis; has always drooled. First 3 mos. severe colic; sleep has always been below normal in amount and is much disturbed by night terrors; frequently wakes ever hour. Had nocturnal enuresis up to 4 or 5 mos. ago, and now must be picked up at ten o'clock. Mind very active.

Infection history:—Negative, except broncho-pneumonia at 1 year.

Physical examination:—Cranium, thickened in parietal regions. Slight beading of the ribs, which flare considerably at

the edges, forming a marked Harrison's sulcus. Heart, lungs, and bronchial glands normal. Cervical lymphatics shotty. Only one testicle in the scrotum.

In this case the family history shows an heredity which is gouty and neurotic. The history of the feeding indicates a fat deficiency, a conclusion abundantly confirmed by the physical examination, which showed quite marked rachitic deformities. Attention should also be directed to the diarrheal tendency, the croupy tendency, the eczema, the tendency to mucous catarrhs, the early colic and the abnormalities of sleep, factors which showed that his gouty heredity was already affecting his general nutrition and making it necessary to adapt the nutritive elements of his environment to it.

His infection history showed that through this channel nothing had happened to warp his organs excepting such damage as might have followed the broncho-pneumonia. The physical examination, revealing normal lungs and bronchial glands, cleared away this factor.

The monorchidism did not influence any of the other conditions present, but should be mentioned in the diagnosis, because it might later in the history of this individual play a rôle. The diagnosis, which should be an abbreviated description of the total physical state of the individual, with special reference to etiological factors, may be expressed in this case as follows:

HEREDITY, gouty and neurotic;

NUTRITION, fat deficiency and slightly gouty;

INFECTION, none;

ANATOMICAL LESIONS, monorchidism;

PHYSIOLOGICAL ABNORMALITIES, disturbed sleep.

This diagnosis gives direction to the management. It first indicates that the fat deficiency must be taken care of; next, that attention must be paid to the gouty elements of the nutrition, especially in view of the heredity; next, that the anatomical condition may be ignored, as well as the functional abnormality, the disturbed sleep, which will probably take care of itself, when the nutrition is corrected. Accordingly, Feb. 13th, the following directions were given: Stop all red meat, but allow fowl, egg, or fish every other day, cereals, vegetables, dates, figs, pineapple juice but no acid fruits, increase fat, in the shape of butter, to the maximum, and give one teaspoonful of cod liver oil, three times a day. March 11, the following note was made on his history: Is now sleeping quietly from 10 p. m. to 6 a. m.

It might seem at first sight as though considerable unnecessary effort had been made and a needlessly long history taken for so small a matter as disturbed sleep. And so indeed it might be if this were all. But as a matter of fact the disturbance of sleep constituted a highly unimportant factor in the diagnosis and really no part of the true diagnosis. It was merely one of the indices of the true conditions. The real factors of the case were the fat deficiency and the autotoxemia. The removal of the first of these and the control of the second could not fail to influence the child's general nutrition, and, as general prophylactic procedures, were highly important.

The diagnosis is not expressed in one word for the very excellent reason that there is no one word which covers the conditions.

The insufficiencies, inconveniences and untruthfulness of single terms to express diagnosis, have long been felt, and so the terms, complications, and sequelae have been utilized to help avoid the difficulties.

If diagnoses, expressed in the manner which I am here advocating are cumbrous, they are so because the conditions which they describe are complex.

Four distinct advantages follow the use of this method of determining and expressing diagnosis:

1st. The totality of the conditions, determinable by our present methods of clinical examination, are fully set forth.

2d. The indeterminate factors are thrown into strong relief, placed where they cannot escape attention and their general relations established.

3d. By bringing clearly forward the indeterminate elements of diagnosis there are suggested, and pointed out lines of clinical observation which are likely to be useful.

4th. The absolute certainty of opinion which is apt to accompany single term diagnosis, is prevented, a state of affairs useful to the patient, even if not altogether conducive to the physician's self-esteem.

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